

FLORIDA HIGHWAYS

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No. 10



Blue Springs—Jackson County.

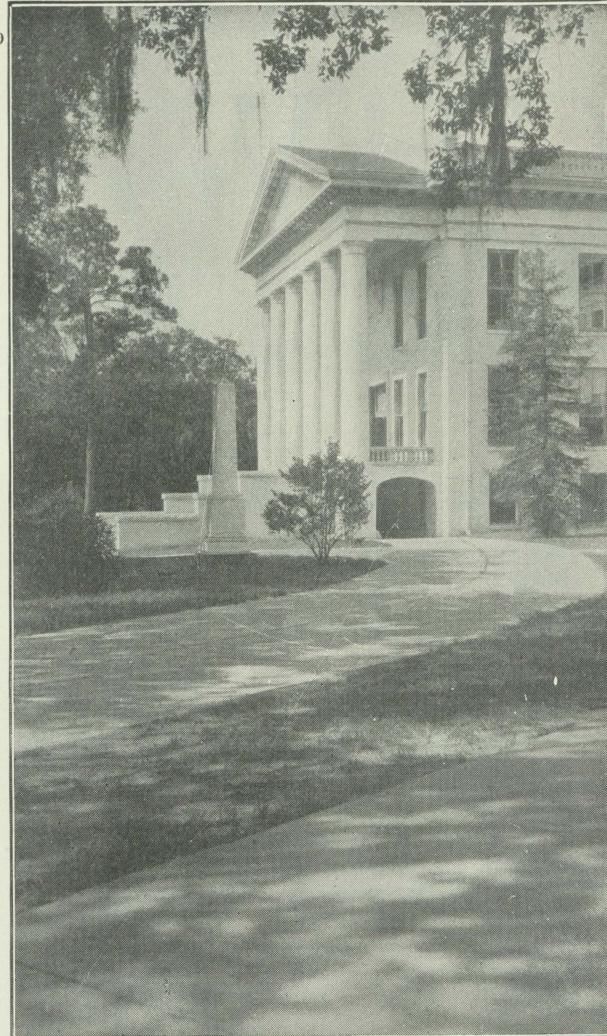
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FLORIDA

Vol. VII
No. 10



HIGHWAYS

OCTOBER
1930

Transactions at Third Quarterly Meeting, State Road Department, Held at Tallahassee, October 8, 1930

THE Third Quarterly Meeting of the State Road Department of Florida for the year 1930 was held at Tallahassee on October 8th, with the following members present: Robert W. Bentley, Chairman, William A. Shands, Mallie Martin, Ernest R. Graham and George B. Hills. B. M. Duncan, State Highway Engineer, B. A. Meginniss, attorney for the Department, Karl Roesch, Secretary, and H. J. Morrison, Federal Highway Engineer, were also in attendance.

CHAIRMAN'S REPORT

The Chairman submitted his regular monthly report, which was received and ordered filed. Said report is in the words and figures following, to-wit:

To the Members of the State Road Department.
Gentlemen:

Since our last meeting the Board of Administration has, with consent of the Board of County Commissioners of Columbia County, sold \$19,000.00 worth of Columbia County bonds to the sinking fund of Columbia County, at par, placing \$19,000.00 cash at the disposal of the State Road Department to be used in construction of the grade of Road 82, Columbia County. The Atlantic National Company of Jacksonville offers to take in charge the balance of the bonds of various counties and municipalities that were turned over to the Road Department by Columbia County in connection with this project and endeavor to convert them into money. The Attorney General, as attorney for the Department, rules that

our Board may, as requested by Columbia County, contract for the grading of Road 82, offering the bonds and money we now have for this road in payment for the work.

We have an offer from the Atlantic National Company to take in charge the \$87,000.00 worth of Madison County bonds given as part payment of the cost of hard-surfacing Road 35, Madison to Taylor County line, and sell them for us, at a price to be agreed upon.

At our last meeting the Board directed the Chairman, the highway engineer and the attorney to review the request of the City of Jacksonville and the Jacksonville Terminal Company, that the Department participate in engineering costs pertaining to preliminary work on Beaver Street viaduct in Jacksonville. This special committee reviewed the matter and decided unanimously against this claim.

The annual convention of the American Association of State Highway Officials meets in Pittsburgh, Pa., November 18-20, inclusive. The State Road Department is a member and it has been customary for at least the Chairman and the Highway Engineer, by direction of this Board, to attend this convention. The Chairman would like the Board to act upon this matter at the present meeting.

Work on the various projects is in the main progressing satisfactorily.

Sincerely yours,
ROBERT W. BENTLEY,
Chairman.

Minutes Approved

On motion of Mr. Shands, seconded by Mr. Graham, the minutes of the monthly meeting held October 10th at Gainesville, were duly approved.

American Association of State Highway Officials

On motion of Mr. Shands, seconded by Mr. Graham, the following resolution was adopted:

BE IT RESOLVED, that the Chairman and the State Highway Engineer are authorized to attend and represent this Department at the meeting of the American Association of State Highway Officials, to be held at Pittsburgh, Pa., in November.

\$87,000.00 Madison County Bonds

The Chairman presented to the members a letter from the Atlantic National Company of Jacksonville, asking the Department to give said company an option on \$87,000.00 of Madison County bonds for a period of forty-five days, same to be sold at not less than 86 and accrued interest.

On motion of Mr. Shands, seconded by Mr. Graham, the following resolution was adopted:

BE IT RESOLVED, that the Chairman be and he is hereby authorized to turn over to the Atlantic National Company of Jacksonville, Florida, \$87,000.00 of Madison County bonds which are the property of this Department, and to give to said Atlantic National Company an option for a term of forty-five days to sell the said bonds at a price to net the Department not less than 86 percent of par, plus accrued interest, said option to authorize the Atlantic National Company to sell the whole or any part of said bonds at said price during the period of its duration.

\$19,000.00 Columbia County Bonds

On motion of Mr. Shands, seconded by Mr. Martin, the following resolution was adopted:

BE IT RESOLVED, that this Department does approve, ratify and confirm the action of its Chair-

man in selling and delivering to the State Treasurer, as ex-officio County Treasurer, \$19,000.00 of Columbia County bonds which were turned over to this Department by said Columbia County towards the construction of State Road 82, the said sale having been made at par and the Department having duly received \$19,000.00 in cash for said bonds.

Glades County—Road 142

Messrs. J. H. Peeples, H. G. Hand, J. S. Cottrell and J. H. Whiddon appeared before the Department and requested that the State take over for maintenance State Road 142 between its intersection with Road 67 and LaBelle, until the Department shall have completed the construction of State Road 25.

On motion of Mr. Bentley, seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that this Department does take over for maintenance that portion of State Road 142 between its intersection with State Road 67 and LaBelle until the Department shall have completed State Road 25.

BE IT FURTHER RESOLVED, that this maintenance shall be effective at once and shall be discontinued immediately upon the completion of State Road 25.

Project 952—Road 3—Dunn's Creek Bridge

Mr. Orman N. Powell, representing Powell Brothers, appeared before the Department to discuss the bid placed by said firm for the construction of Project 952, Road 3, Dunn's Creek bridge. He was informed that this matter will be given consideration when the Department considers awards of contracts on bids received October 6th.

Citrus, Sumter and Lake Counties—Roads 36 and 22

Messrs. George W. Scofield, J. K. Kelly, J. A. Perryman, S. W. Getzen, D. L. Baker, T. J. Owen, T. M. Edenfield, W. L. Getzen and A. Capanis comprised a delegation representing Citrus, Sumter and Lake counties. Mr. S. W. Getzen also stated that he was representing Senator Futch.

This delegation requested that the Department take over and complete Roads 36 and 22 in Citrus, Sumter and Lake counties, including the bridge across the Withlacoochee River between Sumter and Citrus counties.

On motion of Mr. Shands, seconded by Mr. Graham, the following resolution was adopted:

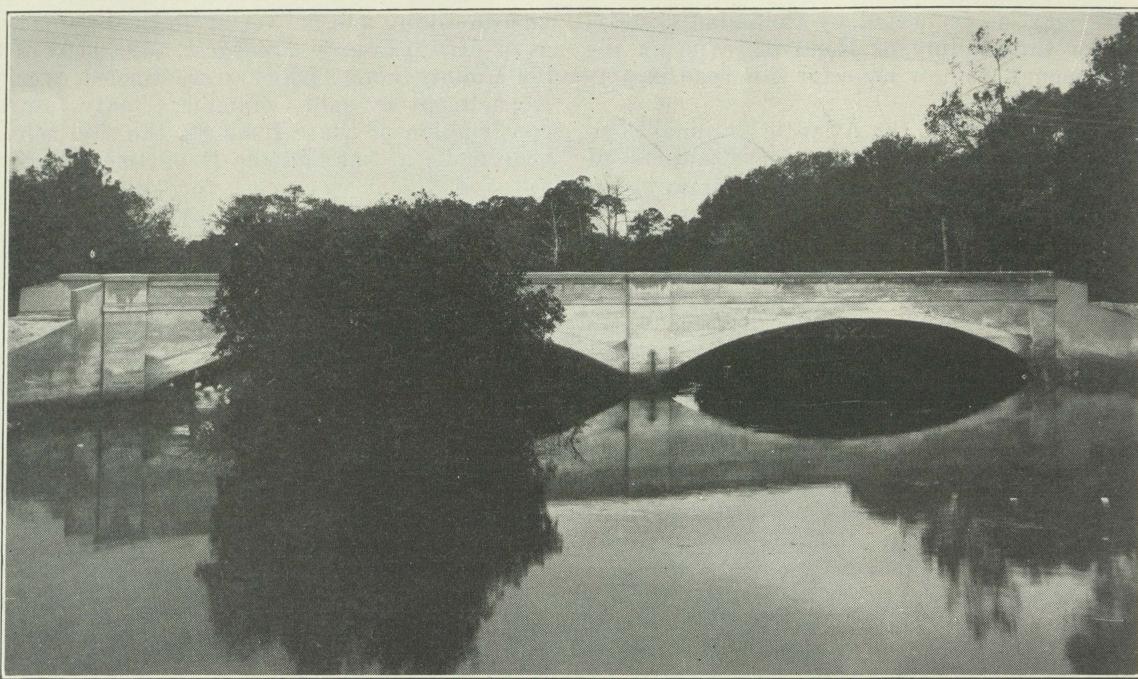
BE IT RESOLVED, that the Chairman and State Highway Engineer be authorized to make an inspection of Road 22 in Lake, Sumter and Citrus counties, and Road 36 from Leesburg to Road 5 and report to this Department at its next meeting as to the advisability of taking the same over for maintenance.

Saint Johns County—Road 47

A delegation from St. Johns County, consisting of Messrs. W. A. MacWilliams, L. A. Braswell, C. H. Arnold, H. K. Jackson and C. Samuel Johnson, requested that the Department advertise for bids for the construction of Project 727, which is that portion of Road 47 from Spuds towards Tocoi, six miles.

On motion of Mr. Graham seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that the State Highway Engineer be directed to prepare plans, arrange for convict camp and advertise for the necessary rock for the construction of Project 727, Road 47, St. Johns County, the bids to be returnable at the next meeting.



Bridge Spanning a Scene of Florida Beauty.

Project 884—Road 3—Duval County

Mr. Tom Baker appeared before the Department to discuss the bid placed by Baker & Holmes for ready-mixed concrete for Project 884. He was informed that decision on his statement will be reserved until the Department has under consideration the award of contracts, bids on which were taken October 6th.

Project 714—Road 28—Union County

The Chairman presented to the members a petition from the Board of Bond Trustees of Union County, Florida, asking that the Department use Birmingham Slag for covering material on Project 714, Road 28, Union County.

On motion of Mr. Martin, seconded by Mr. Hills, the following resolution was adopted:

BE IT RESOLVED, that in view of the contribution by Union County of the sum of \$171,000.00 towards the construction of Road 28 in said county, this Department does accede to the request of the Bond Trustees of said county, to use slag in the surface treatment of Project 714, Road 28 in said county.

Award of Contract Project 952—Road 3—Dunn's Creek Bridge

On motion of Mr. Hills, seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that in view of the irregularity of the bid of Atlantic Bridge Company, this Department does find and determine that Powell Brothers, Fort Lauderdale, Florida, is the lowest responsible bidder for the construction of the bridge over Dunn's Creek, Project 952, Road 3, for the sum of \$83,103.60.

BE IT FURTHER RESOLVED, that contract for the construction of said bridge be and the same is hereby awarded to said Powell Brothers, at and for its bid price of \$83,103.60, submitted to the Department on October 6th.

Award of Contracts

On motion of Mr. Hills, seconded by Mr. Graham, the following resolution was adopted:

WHEREAS, this Department on October 6th received bids for the construction of certain projects and for the furnishing of certain materials and supplies as hereinafter listed; and

WHEREAS, the firms and individuals hereinafter named were and are hereby declared to be the lowest responsible bidders therefor, Now, Therefore,

BE IT RESOLVED, that contracts be and they are hereby awarded for the construction of such projects and furnishing of such materials and supplies, as follows, to-wit:

Construction

Proj.	Road	Type	Bidder	Price
53-D	2	C. G. G. & D. S., C. C. Moore Const. Co.		\$ 81,028.63
535	5-A	Stone Base Course, Wm. P. Mc-Donald Const. Co.		169,820.08
695	2	C. G. G. & D. S., Manly Const. Co.		4,664.34
802-B	10	Timber Bridges, J. R. Chambliss		56,552.00

Materials

714	28	Slag, Birmingham Slag Co.	\$ 8,916.60
714	28	Tar Prime TC 1, The Barrett Co.	2,937.60
714	28	Oil Asphalt, Pan-Am Petrol Corp.	2,899.80
884	3	Ready Mixed Concrete, Capital Concrete Co.	29,685.64
884	3	Hot Binder Course, W. J. Bryson Const. Co.	8,936.00
884	3	MacAsphalt, MacAsphalt Corp.	31,170.93

BE IT FURTHER RESOLVED, that the award of contract above on Project 53-D is conditioned upon receipt of authority to award said contract from the Bureau of Public Roads.

On motion of Mr. Shands, seconded by Mr. Graham, the Department was adjourned until 1:30 o'clock P. M.

AFTERNOON SESSION—1:30 O'CLOCK

Present as at morning session.

Proposals

On motion of Mr. Shands, seconded by Mr. Hills, the following resolution was adopted:

BE IT RESOLVED, that hereafter whenever request is made of this Department by firms and individuals for proposals or bidding blanks, that the same shall be endorsed as nontransferable, with a statement thereon to the effect that the Department



State Road No. 5.—Hernando County.

will not consider the said blank as a bid of any person or firm other than the one so requesting the same; and

BE IT FURTHER RESOLVED, that hereafter when proposals shall be received by the Department, if said proposal shall be offered by a firm or individual other than the one to whom such bidding blank or proposal was sent, the Department will consider the same an irregular bid and will reject it without consideration.

Duval County—Road 3

Messrs. H. J. Redavats, County Commissioner, and J. A. Melson, Road Superintendent of Duval County, appeared before the Department to present a proposed settlement of the difficulty which has arisen with reference to the right of way on Project 884, Road 3, through the property of one Ernest L. Hill. They stated that they believed that they could settle the matter by taking a deed to a certain strip of land, as indicated upon a plat which they then presented and which they stated has been approved by M. P. Philips, Division Engineer for this Department, and by reconveying to Ernest L. Hill the remainder of the land which Duval County has claimed under its posting proceeding of 1923; the proposed settlement also contemplated the acquisition of a strip of land entirely off the road right of way for occupancy by a pole line.

These gentlemen were informed that the proposed settlement is entirely agreeable to the Department.

Road 4—Ferry at Jacksonville

The Chairman presented to the members a letter which he has received from the Florida Ferry Company at Jacksonville, asking that in marking the route of State Road 4 through Jacksonville that the Department indicate to traffic the alternate route by the ferry as well as by way of the bridge. The Chairman was requested to advise this company that instructions will be issued for installation of signs indicating alternate routes via bridge and via ferry.

Project 787-B—Road 10—Walton County Choctawhatchee River Bridge

On motion of Mr. Martin, seconded by Mr. Hills, the following resolution was adopted:

BE IT RESOLVED, that the Chairman be and he is hereby authorized to make application to the War Department for its approval of the construction of a bridge over the Choctawhatchee River, Road 10, Walton County, between Washington and Walton counties, Florida, which said bridge shall be constructed according to plans submitted by the Department, said plans consisting of sheets showing the location, soundings, plan and elevation of the proposed bridge.

Road 4—Broward County

On motion of Mr. Graham, seconded by Mr. Shands, the following resolution was adopted:

WHEREAS, Road No. 4 forms a part of the Federal Seven Percent System of Florida; and

WHEREAS, the State Road Department is desirous of obtaining Federal Funds to aid in the con-



Florida Highways

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PERSONNEL OF DEPARTMENT

ROBERT W. BENTLEY (*Bradenton*), *Chairman*
(*Official Residence, Tallahassee.*)

W. A. SHANDS, *Gainesville*
MALLIE MARTIN, *Crestview*
GEORGE B. HILLS, *Jacksonville*
ERNEST R. GRAHAM, *Pensacola*
KARL ROESCH, *Tallahassee, Secretary*

} *Members.*

PERSONNEL OF EMPLOYEES IN GENERAL CHARGE OF THE WORK OF THE DEPARTMENT

Engineering Division

B. M. Duncan, Tallahassee State Highway Engineer
L. K. Cannon, Tallahassee Ass't. State Highway Engineer
W. I. Nolen, Tallahassee Bridge Engineer
H. C. Weathers, Gainesville Testing Engineer
F. W. Berry, Jr., Tallahassee Office Engineer
W. L. Thorpe, Gainesville Supt. of Equipment
E. K. Fogg, Pensacola 1st Division
Counties—Bay, Calhoun, Escambia, Franklin, Gadsden, Gulf, Holmes, Jackson, Jefferson, Leon, Liberty, Okaloosa, Santa Rosa, Wakulla, Walton, Washington.

M. P. Phillips, Lake City 2nd Division
Counties—Baker, Bradford, Clay, Columbia, Dixie, Duval, Hamilton, Lafayette, Madison, Nassau, St. Johns, Suwannee, Taylor, Union.

R. L. Bow, West Palm Beach 3rd Division
Counties—Brevard, Broward, Collier, Dade, Glades, Hendry, Indian River, Lee, Martin, Monroe, Okeechobee, Palm Beach, St. Lucie.

L. B. Thrasher, Ocala 4th Division
Counties—Alachua, Citrus, Flagler, Gilchrist, Herndando, Lake, Levy, Marion, Orange, Putnam, Seminole, Sumter, Volusia.

R. K. Van Camp, Lakeland 5th Division
Counties—Charlotte, Desoto, Hardee, Highlands, Hillsborough, Manatee, Osceola, Pasco, Pinellas, Polk, Sarasota.

Auditing Division

S. L. Walters, Tallahassee Auditor

B. A. Meginniss, Attorney for the Department,
Editor and Business Manager.

struction of that portion of Road No. 4 from Dania to the Dade County Line in the County of Broward, Now, Therefore,

BE IT RESOLVED, that the Chairman is hereby authorized to submit plans and specifications to the Bureau of Public Roads and make application for Federal Aid for said project; and the Department does hereby pledge that the necessary funds will be provided by said Department for meeting Federal Aid on said proposed Federal Aid Project; and

BE IT FURTHER RESOLVED, that the State Highway Engineer be and he is hereby directed to commence the construction of said road as soon as all necessary plans are completed.

Roads 37, 39 and 41

Mr. Martin, member of the Department, again called the attention of the members to the fact that the unusually heavy movement of cotton over Roads 37, 39 and 41 is giving extreme punishment to these roads and that the Department must take some steps in order to preserve the investment in the same. It was agreed that the maintenance crews of these roads will be increased in order to better maintain the same until further action can be taken in the next budget.

Hillsborough County—Road 5

Messrs. J. N. Holmes, W. N. Hendry, A. B. Pimm, C. D. Johnson and W. C. Powell comprised a delegation which appeared before the Department with further reference to the location of the overhead crossing at Bruing. Mr. Powell and Mr. Johnson in particular insisted that the location as now contemplated by the Department will work severe hardship on the property owners adjacent. The delegation was informed that the State Highway Engineer will endeavor to work out another proposed location for this crossing in the hope of obviating the objections which have been voiced.

Hillsborough County—Connection Between Roads 5 and 17

Mr. A. B. Pimm, County Engineer of Hillsborough County, reported that the acquisition of right of way for the connection between Roads 5 and 17 is progressing satisfactorily and that he has no doubt that this matter can be worked out in the very near future. Mr. Pimm also submitted a sketch showing connection with the proposed overhead on said road, which after some discussion appeared to be satisfactory to the members of the Department.

Polk County—Road 2

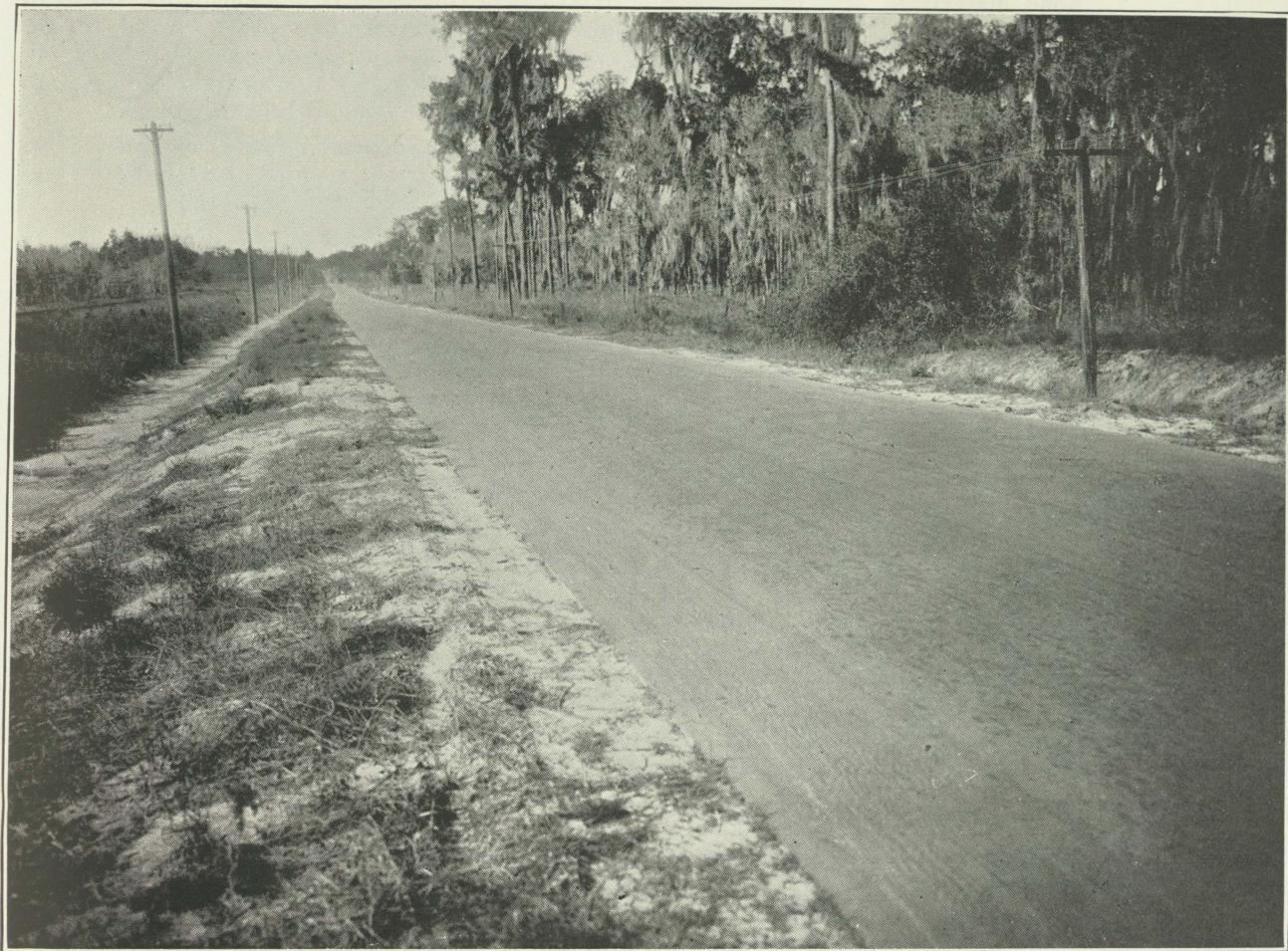
Messrs. M. D. Wilson and J. D. Raulerson of Polk County asked the Department for information as to when it expects to advertise for bids for the construction of Road 2 in Polk County between Bartow and Bowling Green. They were advised that if contract for this work is not let this year it will be very soon in 1931.

Road 4—Eau Gallie

The Chairman submitted to the members a letter from the Assistant State Highway Engineer giving an estimate of \$2,607.48 for resurfacing that part of the street through Eau Gallie, State Road No. 4, which is in bad condition, the cost to be borne in the proportion of \$1999.98 by the State and \$607.50 by the City of Eau Gallie.

On motion of Mr. Martin, seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that the Chairman be and he is hereby authorized to notify the City of Eau Gallie



State Road No. 2.—Orange County.

that this Department will undertake the resurfacing of that part of the street through Eau Gallie, State Road No. 4, which is in bad condition, at a cost of \$2607.48, of which amount the city will be expected to contribute the amount necessary for the extra width beyond the 20 foot center, or a total of \$607.50.

Bridge Over Suwannee River on Road 1, Between Suwannee and Madison Counties

The Chairman presented to the members a letter from the Seaboard Air Line Railway requesting the cooperation of the Department in securing the removal of the old bridge across the Suwannee River, just north of the railroad bridge and the state highway bridge on Road 1.

On motion of Mr. Shands, seconded by Mr. Martin, the following resolution was adopted:

BE IT RESOLVED, that the Attorney of this Department be instructed to correspond with the County Commissioners of Madison and Suwannee Counties and request these boards to remove the old bridge spanning the Suwannee River just north of the railroad bridge and also north of the State Road Department's bridge on Road 1.

Grade Crossings

The Chairman presented to the members resolutions adopted by the Tampa Motor Club requesting the Department to provide in its 1931 budget for as many projects of grade separation between the railroads and highways as it possibly can; and also to make a study of the grade crossing situation with a view to establishing a preferential list of those

grade crossings where the need for separation is greatest. The resolutions commended the efforts of the Department in its present program of grade separation.

Expense Accounts Approved

On motion of Mr. Bentley, seconded by Mr. Shands, the expense accounts of the members were approved as follows:

W. A. Shands	\$17.35
W. A. Shands	26.35
W. A. Shands	22.64
E. R. Graham	28.42
R. W. Bentley	97.43
G. B. Hills	56.03

Award of Contracts Approved

On motion of Mr. Shands, seconded by Mr. Graham, the following resolution was adopted:

WHEREAS, this Department on March 20, 1930, September 23, 1930, and on September 25, 1930, received bids for the furnishing of materials and supplies as hereinafter listed; and

WHEREAS, the firms and individuals hereinafter named were and are hereby declared to be the lowest responsible bidders therefor, Now, Therefore,

BE IT RESOLVED, that the action of the Chairman in awarding contracts hereinafter listed be and the same is here approved, which said contracts are as follows, to-wit:

Machinery

1 Gasoline Engine Driven Core Drilling Outfit Sullivan Machinery Co.	\$1,890.15
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Road Materials

Proj.	Road Material	Contractor	
674	1 Cement, Florida Portland Cement Co.		\$41,212.50
674	1 Crushed Rock, Florida Crushed Stone Co.		26,500.00
825	88 Creosoted Timber and Piling		
	Gulf States Creosoting Co.		8,111.18
674	1 Sand, Suwannee Mfg. Co.		7,118.01
674	1 Reinforcing Steel and Accessories		
	Marshall & Spencer Co.		6,285.06
876-A	78 Lime Rock, W. S. Hotchkiss		2,832.62
823	41 Pea Gravel, Roquemore Gravel Co.		978.75
823	41 Oil Asphalt, Standard Oil Co.		1,387.50
823	41 TC-2 Prime, American Tar Products Co.		1,666.00
Units 73 & 71 Monroe Co.	85% Heart Timber, T. T. Scott		20,385.00

Mule Feed

Stinson Sharman Co.—Grains	\$ 666.20
Howard Grain Co.—Grains	1,412.65
R. P. Atwood Co.—Hay	652.00
Lewis Bear Co.—Hay and Grains	5,092.26

Convict Rations

Smith-Richardson-Conroy, Jacksonville, Meats	\$4,369.37
Lewis-Bear Company, Pensacola, Groceries	2,751.43
C. W. Zaring Co., Jacksonville, Groceries	3,195.64
Hagin-Peters Co., Jacksonville, Groceries	1,232.96
Daffin Mercantile Co., Marianna, Groceries	454.52
Pace Company, Pensacola, Groceries	607.15
Cudahy Packing Co., Jacksonville, Meat	407.10
Wilson & Co., Pensacola, Meat	271.81

Notation of Correction of Minutes

On motion of Mr. Shands, seconded by Mr. Graham, the following resolution was adopted:

WHEREAS, at the last meeting of the Department, an appropriation was made to cover the cost of unforeseen maintenance for the remainder of the present year; and

WHEREAS, the itemized statement of said maintenance was in the original draft of the minutes erroneously copied, and said erroneous draft submitted to the members of this Department and printed in the September issue of Florida Highways; and

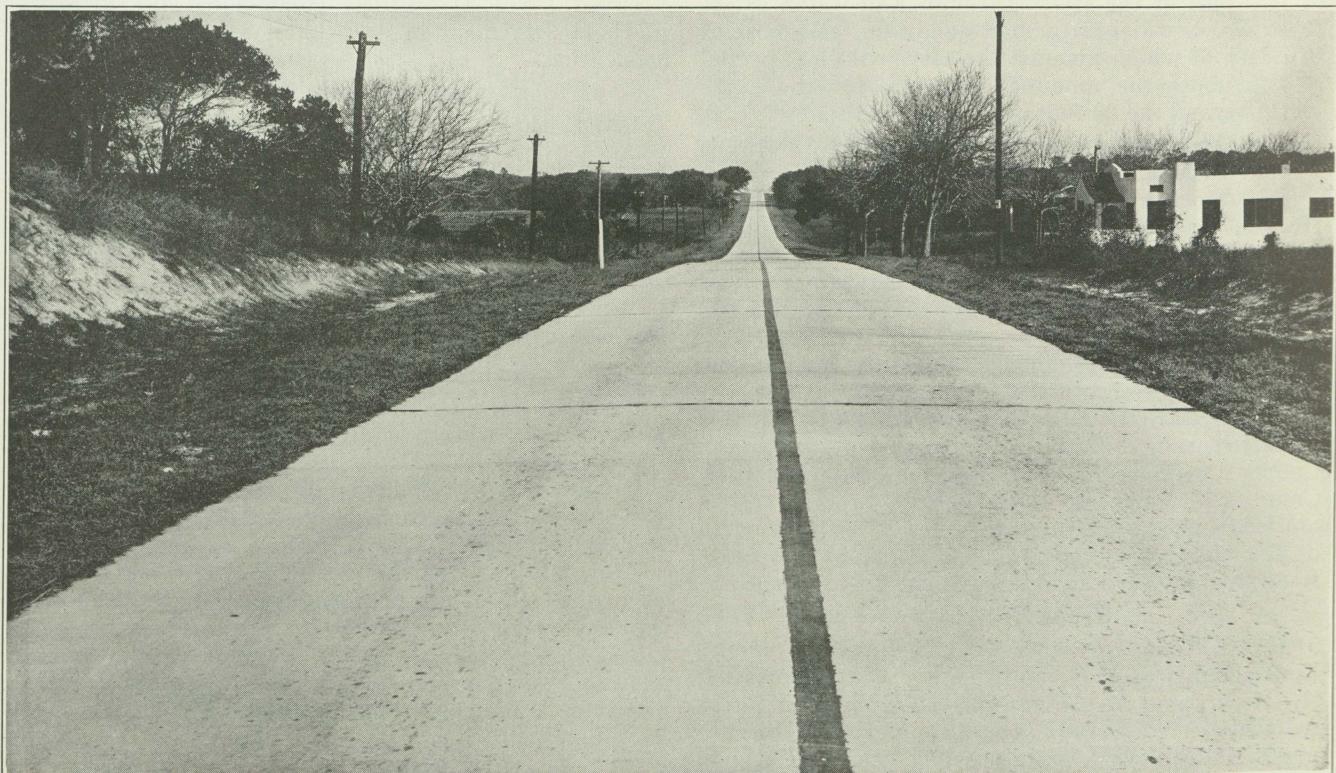
WHEREAS, the official minutes of this Department carry the correct itemized statement of such estimated maintenance, Now, Therefore,

BE IT RESOLVED, that minute is here made that the correct itemized statement of said maintenance for the remainder of the year 1930 is as follows:

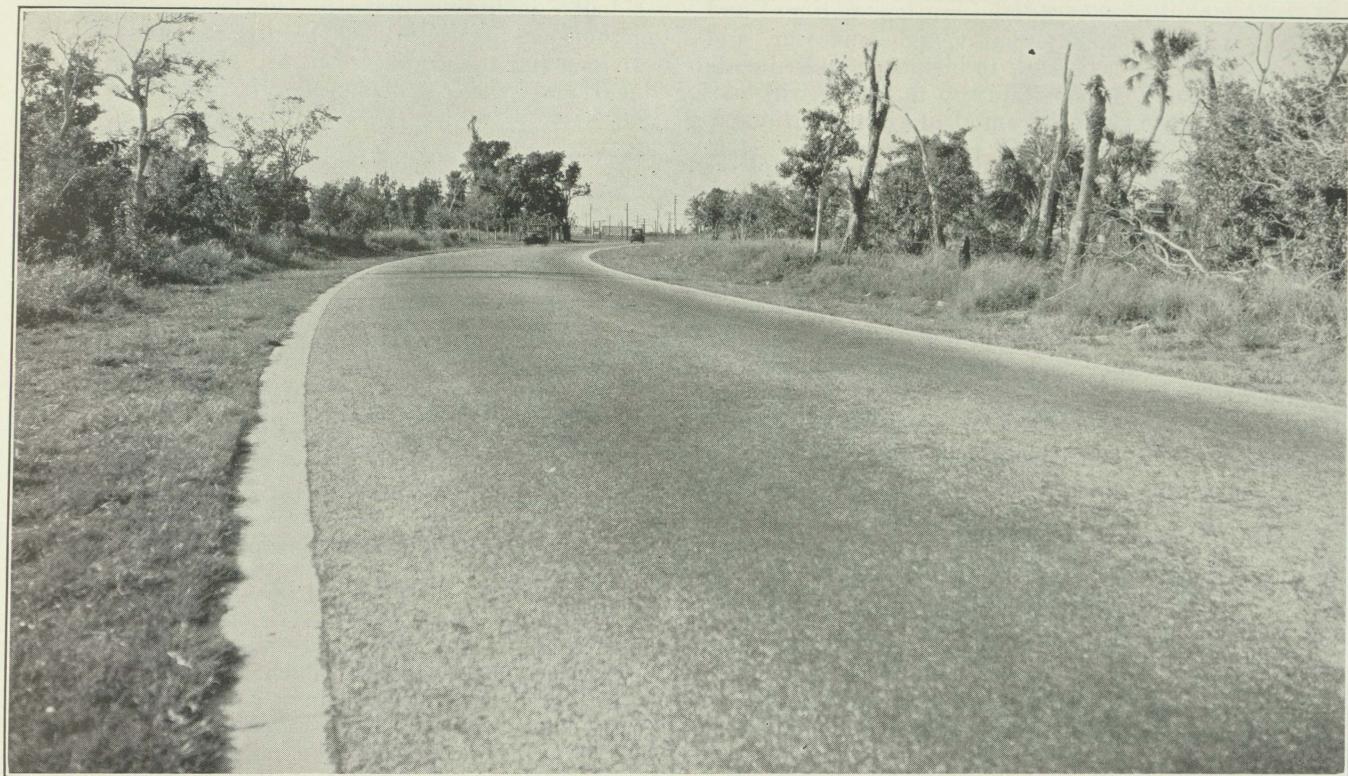
Road 5—Sarasota County—11.0 miles Rock Base Surface Treated—11.0 miles at \$125.00 per mile	\$ 1,375.00
Road 22—Orange county—16.45 miles 16' brick west of Orlando; 25.3 miles 16' Asphaltic Concrete and 2.3 miles 16' Rock Base Surface Treated—Total 27.6 miles east of Orlando. Grand total 44.05 miles at \$150.00 per mile	6,607.50
Road 23—Hernando and Pasco counties—Rock Base Surface Treated—31.5 miles at \$235.00 per mile	7,402.50
Road 23—Hillsborough county — Brick 16.5 miles at \$150.00 per mile	2,475.00
Road 29—Bridge—Three Mile Canal—Operator and Maint.	875.00
Road 164—Collier county—3.5 miles Rock—3.5 miles reshaping and oiling at \$2,084.00	7,294.00
Road 4-A—Bridges over Over-Seas Highway — Monroe county 6.4 miles	24,840.00

Sub-total \$50,869.00
Additional equipment necessary to handle the above increase in our maintenance will be seven Ford or Chevrolet Trucks at \$700.00.....\$ 4,900.00

Grand Total \$55,769.00
On motion of Mr. Shands, seconded by Mr. Graham, the Department was adjourned.



State Road No. 7.—Escambia County.



State Road 4.—Broward County.

National Safety Council

In his annual message delivered at Pittsburgh Sept. 29th before members of the National Safety Council attending the 19th Annual Safety Congress and Exposition, President C. E. Pettibone of Boston said in part:

"I should like to epitomize in a few sentences the facts about accident prevention. This is a fitting time to ask ourselves if we are making progress. You can find people who will always say 'yes,' and you can find people who will say 'no.' The accident statistics, unless carefully analyzed, may be interpreted either way. There have been increases in street and highway accidents. We do not know whether home accidents are being stopped in appreciable numbers. But we do know that in many directions there have been reductions and wonderful achievements by many railroads, industries, and communities and we can prove statistically great progress in specific divisions.

"All social progress is slow, but the significant fact about the accident prevention movement is that it is becoming better understood. The interpretation of it by many agencies is developing a deeper interest and stability, and the already known principles and technique need only be persistently and continuously expanded to have safety become an integral part of our every day living.

"Reductions in accidents will never come like avalanches. Good safety records are usually won after battling with the problem for years. People must be convinced that accidents have definite causes—that they don't just happen. Employers, public authorities and others having influence must have the will and desire to apply themselves seriously to the stopping of accidents.

"We are encouraged, therefore, by the indisputable evidence secured here and there that accidents can be practically stopped. We have the good records of thousands of industries, the 60 per cent reduction on the steam railroads, the 11 per cent reduction in child accidents last year. There is no community that has made an effort for safety which has not made some outstanding record of safety achievement. The safety movement has reached that stage where it cannot possibly stop growing. But the growth is like that of a tree. The yearly accretions may not be noticeable, but the roots are ever sinking deeper and the branches are ever spreading wider and reaching higher into the sky.

"It is vital that we ask ourselves 'Where are we going and how far can we go in this accident problem?' The 1929 death rate per 100,000 population was about 79.9. There were 97,000 deaths—10,000,000 people injured. The increase did not occur in industry, or in the homes; and we know that in the school age group fatalities decreased 11 per cent last year. We all know that the cause of our greatest concern in the accident problem is the motor vehicle. Thirty-one thousand deaths caused by this single type of instrument cannot be accepted as a necessary part of our routine existence.

"What can we do about it? My answer is that we must forget that we are industrial men when we go to work on this job, and recognize the universality of this outstanding appeal for the support and interest of all of our citizens. No one has yet produced an all-inclusive remedy for this increasing accident problem. The National Safety Council is not yet powerful enough to effectively influence every man on the streets, judge on the bench, joy-

rider, jay-walker, city administration, national and state legislature, commercial vehicle operator, and others whom it is necessary to influence and educate in their personal responsibility so that they will take an active part in the program of life conservation.

"The street and highway problem lacks the control we have in industry. We must first make the public understand the seriousness of the accident situation, and then organize effective leadership. We have got to impress every man, woman and child in the country. We must expand our facilities and energize action in every direction to prevent the despair of futility from sapping our courage and undermining the morale of the safety movement.

"If the motor vehicle accident problem is primarily one of organization, then surely 'other public'

accidents, including those in the home, which all together are stealing 43,000 additional lives every year, demand the same treatment. Again this is an educational problem demanding strong leadership.

"I have said that there was an 11 per cent decrease in deaths among children of the school age group last year. What a tribute to safety education, and what convincing proof this is of the necessity for finding organizations in every community and those of national influence that can put over a program of education. The school accomplishments compare favorably with those in industry. We must find a similar structure in community life which will prove to be as effective in reducing street and highway and home accidents."

Seen As Scenic

Roadside Beautification and Clean Rights of Way Make All Kinds of Landscape Pleasing

IN THE onrush to make the roads serviceable for travel, states have gouged out the hillsides to make proper grades and left the scars to cover their own nakedness or glare at you in the boiling sun. Any attempt "to clean up the mess" was deemed a waste of public funds when greater mileage of surfaced roads were needed.

But thanks to the artistic-minded and the nature lover, public opinion has veered to a call for a vista of a field of daisies as well as a bunch of hogs uprooting an alfalfa field.

The state highway departments several years since recognized this added responsibility to their work, and the Federal government has authorized the expenditure of Federal Aid road funds for the planting of trees on the Federal Aid highway system. With this addition to the divisional work of a state highway department, parties are selected who give their entire attention to this work and the American Association of State Highway Officials has created a continuing committee to coordinate the results of the work accomplished.

The present members of this committee are Luther M. Keith, Connecticut, chairman; Phelps Vogelsang, Michigan; James H. Taylor, Massachusetts; John W. Keller, Pennsylvania; W. F. Sayers, Missouri; Frederick A. Gardner, New Hampshire; H. Dana Bowers, California; Oliver A. Deakin, New Jersey; S. H. Boardman, Oregon; H. J. Neale, Virginia.

In a recent address, James H. Taylor, of this committee, described four ways in which this new division of a state highway department may achieve the goal desired—*prevention, elimination, conservation and augmentation*. Speaking to these points he said:

Prevention of the Unsightly

"The foundation for highway beauty should be laid by the designer and locating engineer before construction work is begun:

"A field party chief, whose big aim is a transverse check, is like the proverbial 'bull in a china shop.' His men, with never a thought, chop great scars in the tree trunks to locate (very accurately, no doubt) their tie points. What does the stolid assistant care for beauty? He could have thrown his line a few feet from that row of splendid maples, but it never occurred to him. If you are going to keep men like that on the pay roll, your particular 'highway beautification' will progress slowly.

"In the pursuit of highway beauty, it is necessary for the designer to constantly visualize the ultimate effect to the design. In surface alignment the curves must be adequate and the tangents parts of the harmony. In grade, there must be no inexplicable 'lump' such as the eye of travel detects instantly. *We must constantly keep in mind the total effect of the completed road.*

"Bridge designers are apt to be men who are merely mathematicians; very clever with the slide rule but totally ignorant of the rule of beautiful proportions. A bridge should be something more than a structure of designed interior strength; every bridge should be designed for external beauty as well, and no bridge should be designed without competent architectural assistance. The lines of these permanent works are to delight or disgust the eye for centuries to come.

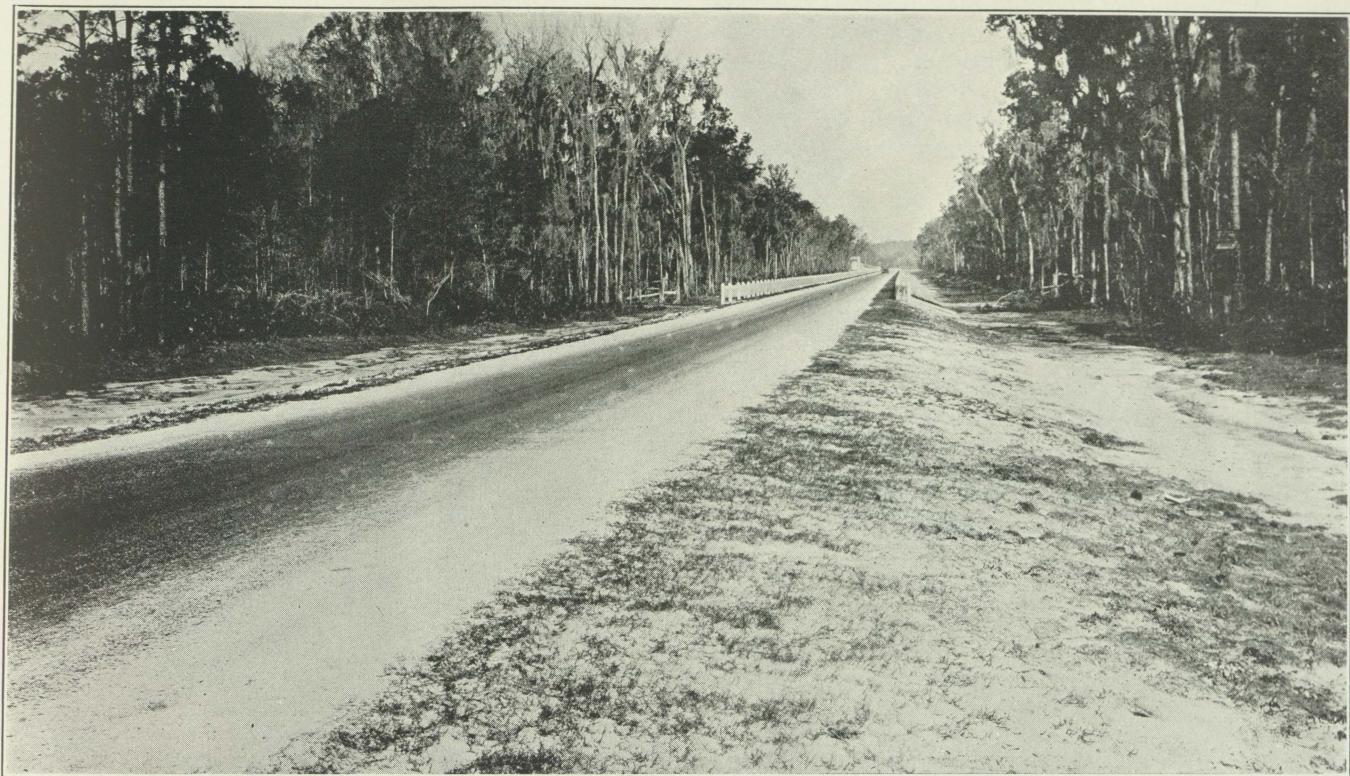
Elimination

"If there have been mistakes through poor design, poor workmanship, or failure to complete the work properly, maintenance must do its best to correct the conditions. If construction money has failed to provide for tree care after construction, maintenance must 'get busy.' Stumps left a foot or two high must be removed. If beautification is to be served faithfully, we must get every dead thing off the highway—dead wood, dead tracks, dead watering troughs, dead signs, dead wire, dead poles, dead contractor's junk. The 'bump' at the railroad crossing must be smoothed out, and after the settlement is complete, the surface drop on either side of its bridge walls should be corrected; also, the specially undesirable weeds, burdock, yellow dock, mullein, and the like.

"There is no reason why beautiful brooks and rivers should be allowed to run behind screens of trees, when a little axe and saw work will give us beautiful pictures. This is one way of the finest type of highway beautification by elimination. The cutting-out of such views, however, must be done by one who has some idea of the composition of the picture. In the past, the chief destroyer of roadside comeliness has been the wire companies.

Conserving Natural Charm

"Clearing the roadside requires a technique based on experience. It is, of course, apparent that highway beautification in any of its phases is possible only as a result of some degree of education. This is espe-



State Road No. 10.—Wakulla County.

cially necessary for this particular stage. The workman must be handpicked and must know the treasures of the roadsides. Only men with real interest in and for the work are worth while. Given just a little to build on, such an interest is easily established. I find that some of our men, who a few years ago knew very little about roadside growth, are today reading into the subject, buying expensive books, using the cultural terms; in short, acquiring a roadside technique. And it must be so, for how can a man develop a roadside, unless he is familiar with its factors?"

Beauty by Augmentation

Mr. Taylor advocates the avoidance of artificiality and the cultivation of natural growth:

"Introduced trees, shrubs, vines, and plants will be used with increasing intelligence as this idea moves along. The monotonous planting of mile after mile of straight rows of evenly spaced trees will not serve the coming generation. More and more will we observe Nature's inimitable way. There can be no better teacher. The scarlet of the woodbine on the grey rock, the glowing lily against the lightened wall, are very small but wonderful touches.

"Your splendid highways in their present frames, beautiful as they are without a thought of esthetic improvement, are amply foundationed to continue as able ministrants to the mere physicality of living. They will carry just as many loads of ashes, just as many bales of rags, just as many pounds of fish; but to my mind, I have suggested the step beyond—the refinement of method—the charm of completeness."

Commercializing the Highway

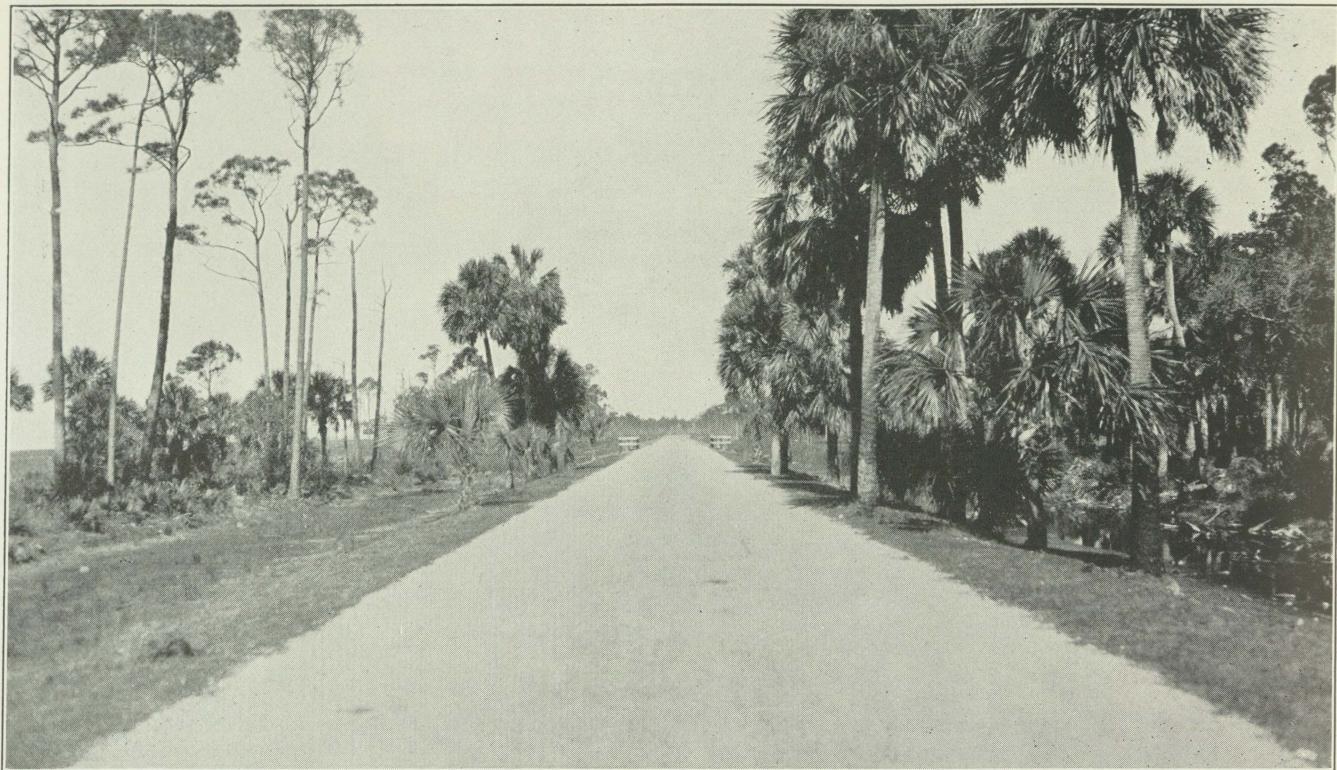
But the suggestions of Mr. Taylor will be wasted fragrance if the highways and adjacent territory are permitted to be covered with billboards as well as unsanitary and unsightly refreshment stands and filling stations.

On this situation a daily paper recently comments: "The question of billboards has occupied the attention of many states, and practically all of the legislatures have adopted regulations of some kind. But Nevada is the only state to prohibit erection of advertising signs where they will mar the scenery along the highways. All the states should imitate this example. The pleasure of motoring has been seriously diminished. Not even in the forests or on the countryside can motorists get away from the commercial atmosphere of shops, garages and machinery. Until the state legislators can be convinced of the value of restrictive legislation of this kind, much can be done by automobile clubs and business organizations."

But legislatures have given some attention to this matter and during the coming winter sessions much more is hoped to be accomplished. Control in states is widely diversified, with some barring all signs from certain sections while others have wide limits within which the billboard operator and sign poster may function.

Connecticut, Massachusetts and Vermont have the most rigid laws. Before any agency can erect commercial advertising signs in these states it must be licensed by state authorities at a certain annual fee or furnish a bond if it is an out-of-state company. Advertising signs in Connecticut must not be placed within 15 feet of the right of way on any highway, and in Massachusetts within 500 feet.

New Jersey, on and after January 1, 1931, requires the outdoor advertiser to take out a license and pay a fee. In addition, he must pay a tax of three cents a square foot for all such advertising except publicity of business carried on upon the premises on which the billboard or other advertising device is located. No billboard shall be dangerously near a highway intersection with another highway or a railroad. Advertising along parks and other public property also requires a permit.



State Road No. 10.—Gulf County.

New York has taken the first step toward even more complete regulation. It has passed for the first time a constitutional amendment which reads: "Advertising on public ways, in public places, and on private property within public view, may be regulated and restricted by law." To become effective, the measure must be passed at the next session of the legislature and ratified by popular vote. When this occurs, New York will have the same constitutional right to control billboards that exists in Massachusetts.

States Accepting the Duty

A recent survey of the situation as to the states accepting the responsibility in highway beautification and protection of scenic areas shows that ten states have official highway department beautification and landscape programs financed by public funds and professionally directed. Several other states will begin this work on January 1 next, and in a number of states there is state supervision of private funds.

In the meantime keeping down the weeds and keeping out the signs, help some.—American Highways.

Engineers of World Renown Inspect U. S. Highways

Three Groups as Nation's Guests Start at Close of Road Congress—Typical Routes in East, South and Middle West Covered—Highway Officials Act as Hosts in their Respective States—Object is the Advancement of Highways in World Service.

MORE than three thousand miles of paved roads in the United States were under inspection by 300 highway officials and engineers, official delegates from 60 nations of the world immediately following the close of the Sixth International Road Congress in Washington on October 11.

Three great tours, the most comprehensive ever undertaken in the history of highway development in any country, were arranged by the Highway Education Board in cooperation with state highway departments, whose officials acted as hosts to the groups passing through their respective states.

Much significance, according to a statement issued by the Highway Education Board, is attached to these tours. "They are separate and distinct from the highway Congress," says the statement, "and since they have been planned solely for their educational value, there will be no hiding of

failure, nor undue flaunting of successes. American highway engineers are greatly pleased in having an opportunity to meet and converse with their colleagues from other lands, and they are sincerely hopeful of being able to impart as well as receive information that may prove helpful to the common project of road building everywhere, irrespective of national boundary lines.

"The tours have been laid out upon a highly practical basis. The first embraces the industrial regions of America where foreign engineers will have an opportunity to learn how roads are built and maintained to keep pace with the movement of traffic by day and by night, all the while increasing in density and weight. The first tour, therefore, has been arranged to pass through the states of Connecticut, Massachusetts, New York, Pennsylvania, Ohio and Michigan.

"The second group of foreign highway officials is being routed over highways built to serve the agricultural needs of the Southeastern states. These include, Virginia, North Carolina, South Carolina, Georgia and Florida, where road requirements are similar to those of other states and countries in the same latitude.

"The third tour has been selected to cover roads serving a more or less mixed traffic in the transport of live stock, grain, coal, factory and other mid-west products. These include the states of Minnesota, Iowa, Illinois, Indiana, and Michigan, where road requirements are in keeping with all other states in the upper regions of the Mississippi Valley, and with foreign countries in the same latitude.

"It is by no means without significance," the statement adds, "that these all-embracing highway inspection tours should converge at Detroit, the world's automobile center, and where the mass production of motor vehicles has forced upon state and Federal highway departments the mass production of roads to meet the insistent demands for modern highway transportation. Because the highway construction job is spread out over so many thousand miles of roads in the making, the work of highway engineers and their assistants may not appear quite so impressive to the eye as the super-factory activities in and around Detroit, but they are none the less significant.

"In a broad sense, the work of arranging for these unparalleled highway tours in order that the world may observe at first hand the benefits that are to be derived from modern highways, really began about fifteen years ago. By 1921 the way was cleared, and under the inspiring influence of state and Federal cooperative laws, and with the aid of inventors and manufacturers of more efficient and

speedier types of road building machinery, the mass production of highways actually began.

"And now," the statement concludes, "highway engineers and officials of note throughout the world are invited as guests of the United States to view the results, not in a vainglorious way, but in a spirit of hopefulness that useful knowledge may be exchanged in the further advancement of highways in public service at home and abroad.

"It is the earnest hope also that acquaintances made en tour may ripen into friendship that will help the cause of mutual understanding between nations. A road and a motor car today are more than a stretch of pavement and a self-moving machine; they are instruments in the hands of Progress in forwarding the common good of the world. This in fact, is the true meaning of the tours which are about to be undertaken on American highways."

Convinced

The circus strong man rode out on horseback to challenge a shovel operator whose great strength had gained him a reputation. He entered the operator's yard, tied up his horse and approached him gruffly.

"Hey," he said. "I've heard a lot about you, and have come a long way to see which is the better man."

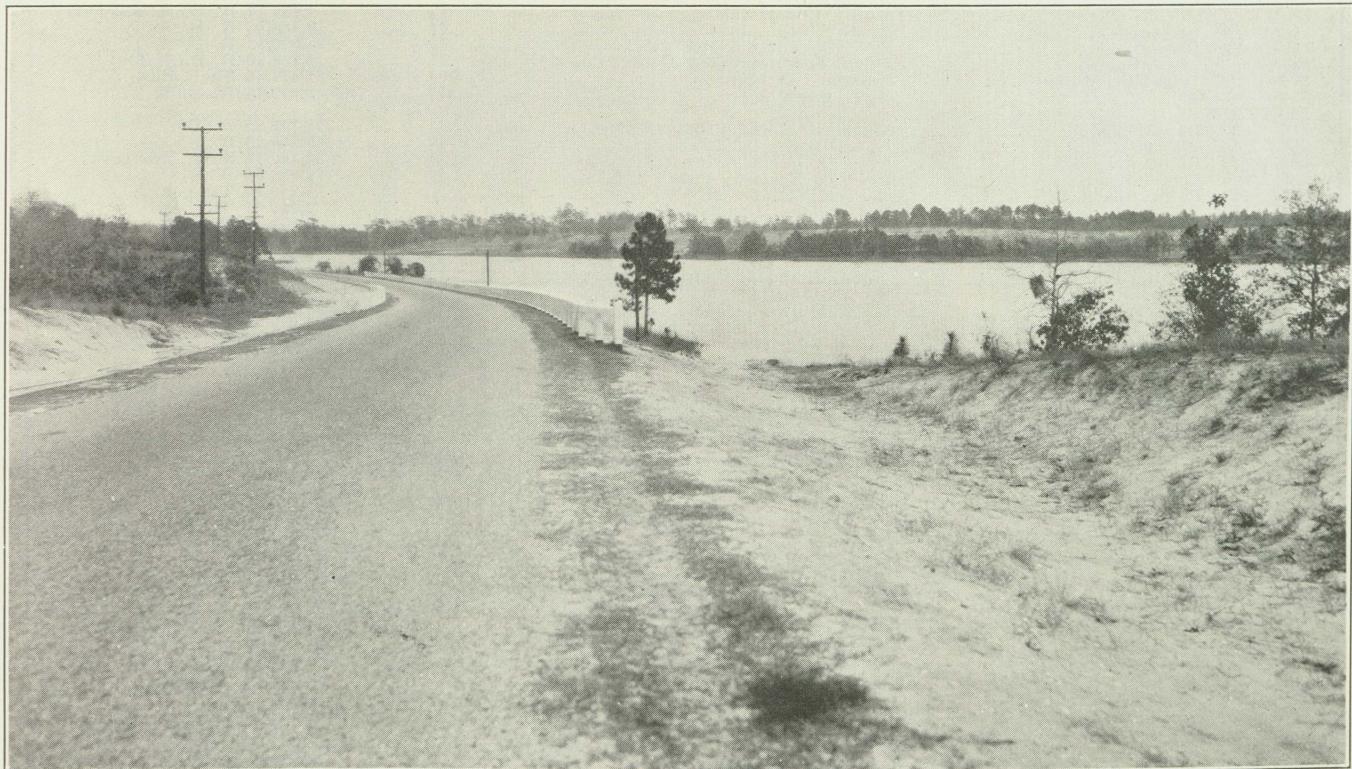
Without answering the operator seized him, hurled him bodily over the fence into the road.

When the loser had recovered his breath the operator growled: "Have you anything more to say to me?"

"No," was the reply, "but perhaps you'll be good enough to throw me my horse."

Father: "Why didn't you get your pharmacy degree?"

Son: "I flunked in sandwich making."



Road No. 14.—Putnam County.

Building Highways for the Future

The State Highway Engineer of Oklahoma Analyzes the Trend of Highway Planning
By A. R. LOSH, Oklahoma City, Oklahoma

IT would seemingly be a vain and useless effort to refer to "Highways for the future," for it is generally believed that our present highways are built for the future. Furthermore, it is the acknowledged principle and advocated policy of every road-building agency in America to so plan and build our highways as to make them serviceable in the future. During the past 30 years the "Good Roads Movement" has been one of the leading public questions and the literature on the subject is redundant with the expression of futurity as one of the essential elements in all planning and building of highways. "Build for the future or not build at all" has been practically the decree of the American public. Our plan of financing road building has been based in a large measure on the theory that future revenues will be used to pay the larger part of the cost, as the roads will be passed on to the road users of the future in perfect condition.

The highway engineer, hoping to avoid the mistakes of earlier builders, made his plans and designs ever

with an eye to the future requirements of the road. Old locations have been abandoned, new rights-of-way secured, wider and heavier bridges and pavements constructed, all with the feeling that the cost beyond present needs and the delays and hardships endured will be more than compensated for in the longer useful life of the new improvement.

I am firmly of the opinion that this belief in the future, this planning for ten, twenty and thirty years ahead in highway building, is the only sound policy to follow. This is true not merely for the sake of the usefulness of the road, but to protect the plans and investments of thousands of individual property owners who have developed their property, built homes and made investments in the secure feeling that the highway was a certainty for practically all time. The destruction of a road or change in location is a matter of public expense which of course should be avoided, but it also involves the destruction of enterprise, the distortion of community life in its schools, churches, and local businesses.

Contracts Awarded by State Road Department

JAN. 1st, 1930, TO OCT. 25th, 1930

Proj.	Road	County	Contractor	Length Miles	Length Feet	Contract + 10%	Type
70	5	Charlotte	Tampa Shipbldg. & Engr. Co.	75	\$ 45,676.40	Bascule	
73-B	17	Polk	Cone Bros. Const. Co.	305	43,984.54	Conc. Bridge	
757-B	2	Polk	Florida Bridge & Const. Co.	117	15,234.78	Conc. Bridge	
758-B	2	Polk	Cone Brothers Const. Co.	436	59,267.06	Conc. Bridge	
20	1	Holmes-Washington	Florida Basic Rock Co.	2.0	19,800.00	Rock Base	
62-A	24	Osceola	L. B. McLeod Const. Co.	5.22	123,676.63	R. B. S. T.	
73-A	17	Polk	Wm. P. McDonald Const. Co.	3.66	88,283.19	Mac Asphalt	
63-C	4	Broward	R. G. Lassiter & Co.	13.24	470,941.54	Concrete	
74	2	Orange	Manly Const. Co.	14.34	387,032.94	Asp. Concrete	
698	19	Leon	H. E. Wolfe Const. Co.	12.45	276,425.45	Concrete	
65	5	Hillsborough	C. M. Moore Const. Co.	.30	23,780.90	R. B. S. T.	
721-B	3	Putnam	L. M. Gray	.25	18,829.00	R. B. S. T.	
835	5	Marion-Citrus	Manly Const. Co.	.15	4,439.71	R. B. S. T.	
40-B	4	Broward	L. M. Gray	.31	10,484.43	R. B. S. T.	
68-A	4	Broward	S. P. Snyder & Sons	.37	28,972.93	R. B. S. T.	
587-B	5-A	Suwannee	Duval Engineering & Contr. Co.	.34	17,736.22	R. B. S. T.	
876-A	78	Duval-St. Johns	Standard Dredging Co.	8.00	81,574.76	Shell Base	
758	2	Polk	A. E. Campbell	.10	2,095.74	R. B. S. T.	
500-B & C							
515	20	Bay-Jackson	Marianna Lime Products Co.	29.43	328,212.85	R. B.	
750	14	Gilchrist	L. M. Gray	12.26	109,936.23	R. B.	
669-Y	27	Collier	Fred D. Beasley, Inc.	10.55	22,320.49	Surf. Treatm't.	
769	5	Lee	Fred D. Beasley, Inc.	1.89	26,988.64	R. B.	
870	143	Palm Beach	Central Fla. Const. Co.	135	8,790.26	Timber	
766	10	Bay	Fla. Bridge & Const. Co.	555	4,461.47	Timber	
688	10	Bay	R. J. Arrington & Son	60	396.16	Timber	
767	10	Bay	J. U. Fletcher	45	751.43	Timber	
669-C	27	Dade	Everglades Const. Corp.	9.48	13,183.50	Rock Cap	
911	68	Bradford	Duval Engr. & Contr. Co.	3.50	24,069.54	Rock Base	
714	28	Union	F. W. Long & Co.	9.14	88,172.04	Rock Base	
62-A	24	Osceola	L. B. McLeod Const. Co.	5.87	104,950.53	R. B. S. T.	
62-D	24	Osceola	L. B. McLeod Const. Co.	12.66	307,070.29	R. B. S. T.	
708	11	Jefferson	Duval Engr. & Contr. Co.	7.98	130,331.33	R. B. S. T.	
806-A	25	Hendry	E. F. Powers Const. Co.	11.00	199,911.51	R. B. S. T.	
57	3	Nassau-Duval	R. C. Huffman Const. Co.	3.40	173,830.52	Embankment	
715-B	28	Union-Bradford	Fla. Bridge & Contr. Co.	783	79,872.63	Conc. Bridge	
66	5	Sarasota	R. C. Huffman Const. Co.	459	128,288.17	Conc. Bridge	
75	27	Collier	Central Station Equip. Co.	561	125,332.26	Conc. Bridge	
898	4-A	Monroe	The Belcher Oil Co.	5.00	5,982.24	Surf. Treat'd.	
745	19	Taylor	Fred D. Beasley, Inc.	15.95	190,777.88	Rock Base	
876-C	78	Duval-St. Johns	R. G. Lassiter & Co.	19.20	330,866.43	Rock Base	
884	3	Duval	Baker & Holmes	.50	7,425.00	Concrete	
869	29	Glades	Reid W. Bryan	9.04	128,714.13	Grading	
720	11	Jefferson	Duval Engr. & Contr. Co.	9.70	191,955.23	R. B. S. T.	
608-B-2	4	Brevard	J. D. F. Boggs	1.07	36,034.53	R. B. S. T.	
672-B	13	Levy	Langston Const. Co.	12.58	150,760.30	Rock Base	
741	13	Alachua	L. M. Gray	1.00	11,918.50	Rock Base	
770	22	Brevard	Standard Asph. Co. of Fla.	3.30	54,906.65	R. B. S. T.	
915	140	Palm Beach	E. F. Powers Const. Co.	2.00	31,318.10	R. B. (Sand)	
892-951	30	Indian River	Fred D. Beasley, Inc.		42,075.00	R. B. (Sand)	
53-D	2	Lake	C. C. Moore Const. Co.	4.48	89,131.49	C. G. & G.	
535	5-A	Lafayette	Wm. P. McDonald Const. Co.	13.20	186,802.08	Rock Base	
802-B	10	Okaloosa	J. R. Chambliss	1986	62,207.20	Timber	
695	2	Lake	Manly Construction Co.	2.48	5,130.77	C. G. & G.	
952	3	Putnam	Powell Bros.	360	91,413.96	Conc. & Steel	
884	3	Duval	Walter J. Bryson Pay. Co.		9,829.60	Hot Mix.	
884	3	Duval	Macasphalt	4.00	34,288.02	Macasphalt	
884	3	Duval	Capital Concrete Co.		32,654.20	Concrete.	
TOTALS				281,39	5877	\$5,289,297.58	

These losses fall heavily on individuals and there can be no recompense. The interest of both the public and the individual justifies the most careful study and planning for the future. It also justifies the additional first cost to secure a permanent improvement.

Notwithstanding our professed intention to serve the future, I feel that the question may be raised as to what extent we are actually facing and meeting the conditions of the future. We must not fail to recognize the fact that the next ten years will bring many and varied changes in the fields of highway administration and engineering. Financing highways will each succeeding year require a larger outlay of public revenue, and, whether from current receipts or from bond issues, new and larger sources of income will be necessary. There are no indications that highway transportation will not continue to increase in importance and develop new methods, new equipment and each year increase in importance in public service.

Coincident with the movement for good roads in this country there was a movement for national highways. After years of agitation a Federal law was passed giving aid to the states for highways and under this law we have worked since 1916 with only minor changes except as to amount of funds provided. The Federal Aid law of 1916 is still the basic law insofar as national participation in highways is concerned.

This is just as its name indicates, aid for highways. It is not a law for a national system of roads. Under the principle of Federal Aid there has been developed a state highway department in each of the 48 states. Approximately 190,000 miles of Federal Aid roads on the state highway systems have been designated, of which about 40,000 miles have received improvement above the class of a gravel road. This is an excellent piece of work and the standards of highway engineering have been developed to a degree that would not have been possible without the influence of Federal Aid. This development has been entirely along state lines and not national. Although by mutual agreement the states have a national road insofar as their continuous marking is concerned, there is not today a national system of highways primarily serving the nation and designated by the Federal government. There is not a single transcontinental route fully improved from coast to coast nor is there a national plan for such an accomplishment. We have made wonderful progress toward the development of 48 excellent state highway systems but the master or national system is still unprovided. What will be the policy of national participation in highway affairs 10 or 15 years hence? Will the present plan of aid to state system be continued or will there be a national system located, built and maintained by the Federal government? The layman has believed all along that the Federal government was building highways rather than aiding in their building and that there was in reality a National Highway system.

There is an increase in nation-wide travel and transportation over the highways. Common carriers engaged in interstate business are using the highway extensively and require national regulations. The need for a number of continuous major routes, completed to a high standard, is universally apparent and a national system offers the only solution. The question of Federal Aid and a national system have never been presented to the American public. When these

two subjects are understood I believe we will have a national system of restricted mileage and Federal Aid as at present on an extensive mileage of state highways.

Generally the state highway systems of the country are too small to include all the roads of state importance. Only eleven per cent of all rural highways are in the state systems, which also includes the present Federal Aid roads. This represents the mileage which at the present time receives complete engineering supervision. The trend is to increase state highway mileage as funds are provided for construction and maintenance. No state has ever decreased its state highway system and there has never been a demand by the public to take highways from the state system and place them in the local system. State highway systems will increase but this should be a logical expansion. As the main roads are improved, roads next in importance should be taken over by the state. Population centers must be connected with the state system and as it expands smaller and smaller groups will be reached, each succeeding year. The limits to which a state highway system should be expanded are determined by funds available and the efficiency of the organization in its decentralized units. No highway department in the central west or the southwest has approached the limits of effective administration and might well be expanded over a much larger mileage.

Highway departments in the future will be concerned with problems other than the construction and maintenance of roads. Contact with the public will come through roadside protection and beautification, control of roadside advertising or its elimination, motor vehicle registration and regulations, police patrol of highways, roadside concession and other matters touching upon the protection of the traveling public and the preservation of the highway.

On the work of the engineer more than any other depends the future usefulness of the highways. A highway properly located with ample right of way becomes a permanent public-owned utility, which, year by year, becomes more valuable as the country develops. If not properly located, it must sooner or later be abandoned, with a loss to the public and to the individual property owners. Principles of location can be referred to but briefly, but to remain a permanent location a highway must be on the shortest practical line, giving due regard to such natural conditions as grades, flood hazards and topography. If a better location is available, eventually it will be adopted. For the protection of the road and for the future improvements ample right of way should be obtained. Insufficient right of way has been one of the most common mistakes of the past, it makes future widening impossible or unduly expensive. Generally 80 feet is now the accepted width for state highways. It should not be less than 100 feet, and a building set-back of an additional 50 feet each side of this is desirable. Through parkways, recreational areas, and sections of scenic beauty the state should either own the land for 500 feet each side of the highway or control all activities within the area. There are many sections along the highways of Oklahoma where national parkways and play grounds can be developed at a very small expense, but if left unprotected these beauty spots will be commercialized by cheap and unsightly camp grounds and disfigured with every kind of outdoor advertising. When a

highway is first projected the natural rights of the citizenship as a whole should be protected.

In building and designing roads we should consider the amount and kind of traffic to be carried and the limiting speed. The 10-foot traffic lane is now generally accepted by engineers as the minimum which is satisfactory. A two-lane road of 20-foot width will carry about 1,000 vehicles per hour. For traffic in excess of this amount a 40-foot, or four-lane, road-

way should be made. There is little advantage in a three-lane road and it is dangerous under heavy traffic. Few highways outside of the strictly metropolitan area will require roadways wider than 20 feet. After making a very careful study of highways in the Cleveland (Ohio) area it was found that only one-fourth of the main routes, within a 30 mile radius of the city, requires a roadway of greater than 20 feet in width.

Status of Construction

COVERING MONTHS OF JUNE, JULY, AUGUST AND SEPTEMBER, 1930.

Proj. No.	Contractor	Road No.	County	Total Length Miles	Clearing Miles	Grading Miles	Base Miles	Surface Miles	Type	Per Cent Complete
40-B	L. M. Gray	4	Broward	.31			.31	.31	R.B.S.T.	100.00
57	R. C. Huffman Const. Co.	3	Nassau-Duval	3.40	.75	.10			Graded	2.00
62-A	L. B. McLeod Const. Co.	24	Osceola	6.32			6.32	6.32	R.B.S.T.	100.00
62-A	L. B. McLeod Const. Co.	24	Osceola	5.87			0.00	0.00	R.B.S.T.	0.00
62-C	L. B. McLeod Const. Co.	24	Osceola	12.09			12.09	12.09	R.B.S.T.	100.00
62-D	L. B. McLeod Const. Co.	24	Osceola	12.66			10.76	0.00	R.B.S.T.	65.00
63-A	Morgan-Hill Paving Co.	4	Palm Beach	9.21				8.75	Concrete	95.00
63-C	Robert G. Lassiter Const. Co.	4	Broward	13.24				5.96	Concrete	55.00
64-A	H. E. Wolfe Const. Co., Inc.	17	Hillsborough	9.61				9.61	Concrete	100.00
65	C. C. Moore Const. Co.	5	Hillsborough	.30			.30	.30	R.B.S.T.	100.00
68-A	S. P. Snyder & Son	4	Broward	.37			.12	0.00	R.B.S.T.	40.00
73-A	Wm. P. McDonald Const. Co.	17	Polk	3.66			3.66	3.00	Macasph.	90.00
74	Manly Const. Co.	2	Orange	14.34			13.00	12.00	Bit. Conc.	84.00
500-B	Marianna Lime Products Co.	20	Bay	12.65			0.00	0.00	R.B.S.T.	0.00
500-C	Marianna Lime Products Co.	20	Bay	12.18			4.00	0.00	R.B.S.T.	2.00
515	Marianna Lime Products Co.	20	Jackson	4.59			0.00	0.00	R.B.S.T.	0.00
587-B	Duval Engr. & Contr. Co.	5-A	Suwannee	.34			.34	.34	R.B.S.T.	100.00
608-B	J. D. F. Boggs	4	Brevard	1.07	0.00	0.00	0.00	0.00	R.B.S.T.	0.30
677-B	Langston Const. Co.	13	Levy	12.58			0.00	0.00	R.B.S.T.	0.00
698	H. E. Wolfe Const. Co., Inc.	19	Leon	12.45				12.45	Concrete	99.00
706-A	T. B. Gillespie, Inc.	28	Clay-Putnam	10.83			10.83	10.83	R.B.S.T.	100.00
708	Duval Engr. & Contr. Co.	11	Jefferson	7.98			6.75	0.00	R.B.S.T.	75.00
713	State Convict Forces	28	Columbia	10.00			10.00	5.00	R.B.S.T.	90.00
714	F. W. Long & Co.	28	Union	9.14			8.68	0.00	R.B.S.T.	30.00
720	Duval Engr. & Contr. Co.	11	Jefferson	9.70			0.00	0.00	R.B.S.T.	0.00
721-B	L. M. Gray	3	Putnam	.25			.25	.25	R.B.S.T.	100.00
741	L. M. Gray	13	Alachua	.84			0.00	0.00	R.B.S.T.	0.00
745	Fred D. Beasley, Inc.	19	Taylor	15.95			2.00	0.00	R.B.S.T.	15.00
750	L. M. Gray	14	Gilchrist	12.26			11.03	3.00	R.B.S.T.	90.00
756	State Convict Forces	19	Marion	11.89			11.89	11.89	R.B.S.T.	100.00
758	A. E. Campbell	2	Polk	.10			.10	.10	R.B.S.T.	100.00
769	Fred D. Beasley, Inc.	5	Lee	1.89			1.89	0.00	R.B.S.T.	80.00
770	Standard Asphalt Co. of Fla.	22	Brevard	3.30			0.00	0.00	R.B.S.T.	0.00
787	State Convict Forces	10	Walton	16.27	16.27	13.92			Graded	85.00
798	State Convict Forces	13	Nassau	15.03	12.48	10.10			Graded	73.00
801	Convicts	48	Bradford-Union	11.78	7.06	7.06			Graded	60.00
805	Convicts	25	Hendry	9.42	4.35	.80			Graded	10.00
806-A	E. F. Powers Const. Co.	25	Hendry	11.00			5.00	0.00	R.B.S.T.	30.00
820	H. D. Spangler & Co.	96	Jefferson	9.45	8.03	6.61			Graded	65.00
821	H. D. Spangler & Co.	96	Jefferson	5.18	5.18	5.18			Graded	100.00
825	Convicts	88	Holmes	10.37	5.00	3.50			Graded	40.00
831	Convicts	115	Bay	7.16	7.16	7.16			Graded	100.00
832	Convicts	10	Santa Rosa	16.01	16.01	13.42			Graded	90.00
833	Convicts	10	Santa Rosa	8.02	8.02	4.58			Graded	50.00
835	Manly Const. Co.	5	Marion	.15			.15	.15	R.B.S.T.	100.00
841	Convicts	115	Walton	6.44	6.44	6.44			Graded	99.00
845	Convicts	19	Taylor	8.57	8.57	8.57			Graded	99.00
846	Convicts	19	Taylor	11.00	11.00	10.45			Graded	85.00
854	G. W. Byrd	60	Walton	9.81	9.81	9.81		9.81	S-Clay	100.00
857	Convicts	53	Santa Rosa	19.00	1.00	1.00	.35		Grading	2.00
868-C	Convicts	5	Levy	12.34	7.00	6.45			Grading	45.00
869	Reid W. Bryan	29	Glades	9.04	0.00	0.00			Grading	0.00
870	S. J. Groves & Sons	143	Palm Beach	10.83	10.83	10.83	2.00	0.00	R.B.S.T.	40.00
876	Convicts	78	Duval-St. Johns	28.90	23.10	22.15			Grading	80.00
876-A	Standard Dredging Co.	78	Duval	9.70			9.70	0.00	R.B.S.T.	85.00
876-C	Robt. G. Lassiter & Co.	78	Duval-St. Johns	19.20			0.00	0.00	R.B.S.T.	0.00
878	Convicts	77	Gilchrist	10.48	10.48	9.00			Grading	90.00
884	Baker & Holmes	3	Duval	2.45	0.00	0.00	0.00	0.00	Concrete	0.00
911	Duval Engr. & Contr. Co.	68	Bradford	3.50	3.50	3.50	3.50	0.00	R.B.S.T.	95.00
915	E. F. Powers Const. Co.	140	Palm Beach	2.00	0.00	0.00	0.00	0.00	R.B.S.T.	0.00
Total complete September 30, 1930				3071.79	3041.85	1664.26	2473.51			
Complete months of June, July, Aug. and Sept.				50.24	55.19	79.88	64.89			
Total complete May 31, 1930				3021.55	2986.66	1584.38	2408.62			

TOTAL MILEAGE COMPLETE

Concrete	Brick	B.C.	S.A.	B.M.	Asph.B.	R.B.S.T.	S.C.S.T.	S.C.	Mac-Asph.	Marl	Total
Complete to May 31, 1930.....	353.79	17.13	41.31	114.75	109.57	23.70	1,331.83	290.54	205.03	.77	27.58 2,516.02
Complete months of June, July, Aug. Sept.	19.08		10.46				57.13		.20	2.52	89.39
Complete to Sept. 30, 1930.....	372.87	17.13	51.77	114.75	109.57	23.70	1,388.96	290.54	205.23	3.29	27.58 2,605.41

Present speed regulations are well in keeping with our vehicles and road conditions. We may expect speeds up to 60 miles per hour for light motor vehicles on the open highway. The engineer should design for these speeds where the danger of cross traffic is eliminated and where grades and alignment will permit easy curves with ample vision. The roadway surface or pavement must sustain the maximum traffic loads; this also applies to bridges and culverts. Until recently highway engineers were building rigid concrete roadways 9 inches at the edge and 6 inches at the center, on the assumption that such a pavement would sustain repeatedly the heavy axle loads of modern truck traffic. Maximum axle loads of 16,000 pounds, we assumed as sufficient for all transportation purposes. Our bridges were also built for maximum cross truck loads of 15 tons. These standards are barely suitable for present-day conditions and give practically no margin for future increase in loads. These designs show marked signs of stress, after a few years of modern traffic. The Oklahoma State Highway Department has increased the carrying capacity of its roads and bridges 33 1/3 per cent over these designs. Reinforced concrete pavements are 20 feet wide, 10 inches at the edge and 7 inches at the center. Bridges are built 22 feet wide, 16 feet of vertical clearance and designed for a 20-ton truck.

It is interesting to note the load restrictions recommended by the recent "National Conference on Street and Highway Safety." For major highways the conference recommends maximum axle loads as follows: Metropolitan areas, 22,400 pounds; industrial areas, 18,000 pounds; agricultural areas, 16,000 pounds.

Also these recommendations would permit, as a maximum, single truck train loads in excess of 75 tons on bridges. These are recommended as present-day loading conditions and represent what actually exists in many localities. These are severe requirements to meet and only the heaviest of our modern roads and bridges are adequate for these loads. The construction of previous years meets only the recommendations for the agricultural districts. Oklahoma's recent standards for major roads are only slightly under the maximum recommendations for metropolitan areas.

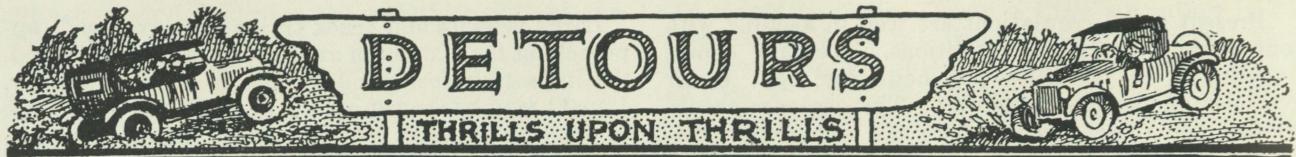
Other recommendations of this national conference would permit single vehicles 33 feet in length, 8 feet in width, 12 feet in height. Truck trains with their loads might be 88 feet long and, as previously stated, have a gross weight of over 75 tons. At the present time we have several truck trains in Oklahoma which are 75 feet long, 8 1/2 feet wide and of a gross weight up to 54 tons. The recommendations of the national conference indicates traffic conditions which are practically upon us. These must be met by adequate designs on our major routes and by proper restriction on less important roads when the cost of heavier construction is not justified. The time is at hand when traffic regulations must consider the safety and convenience of the road user and also the preservation of the road itself. The speed of a vehicle should depend upon its length and axle loads. A truck train 88 feet long if operated in excess of 10 miles per hour on a twenty-foot road is hazardous to traffic. Any traffic attempting to pass such a train is endangered by approaching traffic. If a train of this kind is operated at 25 miles per hour it requires a road clearance of about 300 feet for a car driving at 45 miles per hour to pass the train. On a busy two-lane road such a truck train practically limits the speed of all vehicles following it to its own speed.

Large vehicles and truck trains have axle loads approaching the maximum and, if driving at high speed, the impact on roads and bridges is a serious matter. Impact may be the equivalent of a two-thirds increase in load for speeds from 10 to 20 miles per hour. Recent investigations by the Oklahoma State Highway Department have revealed some rather startling conditions on heavy motor vehicles. A vehicle registered at 3 1/2 tons carrying capacity weighed with its load 16 tons. The legal axle load on paved roads is eight tons but we find numerous cases of 10, 12 and even 16 tons, on one axle. It is not unusual to find loads 138 inches wide. The state law limits widths to 90 inches. Most states have a limit of 86 inches.

The engineer cannot cope with traffic conditions which have no limitations. We need a classification of highways into primary, secondary, and tertiary, with definite standards of construction and permissible loads for each class. Also there should be a flexible administrative control of highways to meet the seasonal conditions of low-type roads. To illustrate, we have in six southeastern counties of Oklahoma 15,256 motor vehicles of all classes, only 18 are of two-ton or greater. In these same counties there are 544 miles of earth and gravel state highways. In extreme weather, if these 18 large vehicles and similar foreign vehicles are kept off the highways for a few days, the roads will remain in good condition and passable at all times, but these heavier trucks, if permitted on the roads, will break up the road crust and inconvenience all traffic. The scattered rural population and the agricultural industry represented should have an extensive system of serviceable market roads, open throughout the year. There are approximately six and a quarter million (6,250,000) farms in this country. Four and three-quarter million (4,750,000) or 76 per cent are on dirt roads with little or no improvements. A prosperous agriculture is a necessity, socially as well as economically, and we must not forget that one-third of the homes of the country are farm homes. The agricultural interests not only represent the national food supply, but also that element in our citizenship which has in the past given independence, vitality and strength of character to our national life. Any plan of road building which continues to the present condition cannot be looked upon as contributing to the success of American agriculture. This problem can be met and solved by a reasonable expenditure, engineering supervision and the enforcement of traffic regulations to protect the roads.

Our annual road bill is now about 1 1/2 billion dollars. The average expenditure for the next ten years will be at least twice this amount. The funds will come from various sources. The road user now pays 60 per cent of the highway cost through license fees and gasoline taxes. We may expect the road user to pay more in the future with a graduation of fees depending upon the use of the vehicle—the private passenger car, the commercial car and the truck, the common carrier, all paying various fees for their respective privileges. Then also there must be a further graduation on the type of vehicle, depending upon the weight, length, tire equipment and special use. Roadside establishments depend upon the business brought to them by the highway, yet they pay nothing to the highway in return. Advertising, if permitted on the highway, should pay advertising rates for the privilege. General property should contribute to the local road fund in the same manner that it does to other governmental functions such as

(Continued on Page 19)



Definition: A pedestrian is a man looking for the place where he parked his car.—Life.

There was once a time when the neighbors dropped in for a call instead of calling in for a drop.—Louisville Times.

The old saloon used to have a family entrance, and now the family has a bootlegger's entrance.—Life.

He: "My brow is lily white."

Her: "Yes, ivory is white, I know."

"Do you sell candy, automobiles, fishing tackle, snow shovels, church bells and the like?"

"No, madam, we only fill prescriptions."

"Then, why do you call this a 'drug store'?"

Insurance Salesman: "Rastus, better let me write you some insurance."

Rastus: "No, sah. Ah ain't any too safe home as it is."

"Ma, is it right to say that you 'water a horse' when you give him a drink?"

"Yes, son."

"Well, then, I'm going to milk the cat."

University picks President Hoover as one of the ten leading engineers of the past twenty-five years, but it is beginning to look as if he might be better off in his present job if he'd had a little training as a conductor.—Macon Telegraph.

A quiz listed the following question: "Define a bolt and nut and explain the difference, if any." A sweet young thing submitted the following:

"A bolt is a thing like a stick of hard metal, such as iron, with a square bunch on one end and a lot of scratching wound around the other end. A nut is similar to the bolt only just the opposite, being a hole sawed off short in a chunk of iron, with wrinkles around the inside of the hole."

"I've never kissed a girl in all my life."

"Well," cried the flapper, "don't come buzzing around me. I'm not running a prep school."

Patient: "Doc, why does a small cavity feel so large to your tongue?"

Doc: "Oh, just the natural tendency of your tongue to exaggerate."

"Brederin, we'se got to do sumpin' to remedy de status quo."

"Parson, what am de 'status quo'?"

"Dat, my brudder, is de Latin for de mess we'se in."

Some Spoon

"That reminds me," said the man who watched the steam shovel at work. "I'm to play golf tomorrow afternoon!"

Most All Do

Daughter: "When did you first get acquainted with dad?"

Mother: "About three weeks after we were married."

Music for the Occasion

Mother (to Bobby): "Surely you did something else but eat at the school treat?"

Bobby: "Yes, mummie, after tea we sang a hymn called, 'We can sing, full tho we be'."

Mother learned later that the hymn selected had been "Weak and sinful tho we be."

The Ruling Passion

"Did you see in the paper where that fellow beat his wife to death with a golf club?"

"No, how many strokes?"

You Heard Me

Husband: "If a man steals—no matter what—he will live to regret it."

Wife (sweetly): "You used to steal kisses from me before we were married."

Husband: "Well, you heard what I said."

Tough Camp

Alkali Ike: "What's happened to the tenderfoot oiler wot came to work on the shovel last week?"

Texas Pete: "Poor fellow. The second morning he was here he was brushin' his teeth with some of that foamy tooth paste and one of the boys thought he had hydrophobia an' shot him."

Enough's Enough

A young salesman whose wife was making a prolonged visit at the home of her parents became quite excited on receiving the following telegram: "Twins arrived, doing fine, more later."

He rushed to the nearest telegraph office and wired to his wife:

"My gosh, kid, countermand later order, two is plenty."

Learning His Stuff

Shovel Operator to Son: "How are you getting along in school now?"

Son Joe: "Fine, we're learning words of four cylinders now."

"Dorothy is getting a man's wages."

"Yes, I heard she was married."

He: "Are ye fond of moving pictures, Jennie?"

She (hopefully): "Aye, Sandy."

"Then maybe, lass, ye'll help me get half a dozen doon out o' the attic."

Parson: "Why do you desire to join the church?"

Rastus: "Pahson, I'se got a job puttin' Mule-Hide on a chicken coop and fencing a watermelon patch, and I needs strengthenin'."

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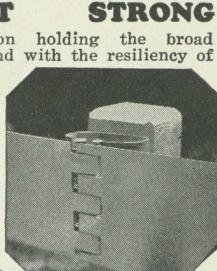
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BUILDING HIGHWAYS FOR THE FUTURE

(Continued from page 17)

schools, courts, and public protection. Local taxes should not be used to build what is primarily a state institution, but local roads which are local institutions.

The Federal Aid contributed in 1929 was \$75,000,000. This was on 20 per cent of the total expenditure on the Federal Aid system and 10 per cent of the expenditure on the state system. It was only five per cent, or one-twentieth, of the total highway expenditure of the nation. The Federal proportion will be somewhat higher during 1930, due to increase in appropriation. It is believed that one of the developments of the future will be increased activity on the part of the Federal government in highway affairs of the nation.—The Earth Mover.

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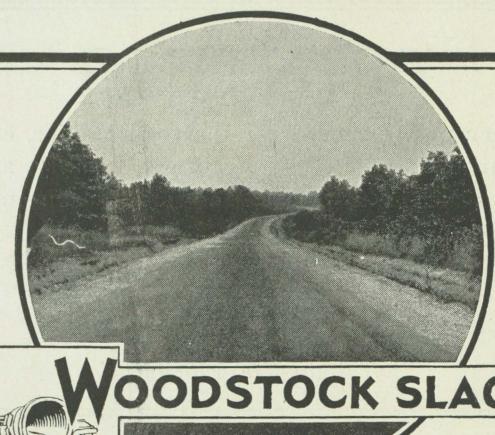
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